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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/389,085	09/02/1999	JOE H. MULLINS	UNME-0019-1	4882

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FAIRFAX, VA 22030

EXAMINER

GRIER, LAURA A

ART UNIT PAPER NUMBER

2644

DATE MAILED: 07/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

TR

**Office Action Summary**

Application No. 09/389,085		Applicant(s) MULLINS, JOE H.	
Examiner Laura A Grier		Art Unit 2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-20 is/are rejected.
- 7) ☒ Claim(s) 4 and 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
     If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:  
         1. ☐ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
     a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>3</u> . | 6) <input type="checkbox"/> Other:  |

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## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claim 1** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hobelsberger, U. S. Patent No. 5461676 in view of Van Den Thillart and further in view of Takeyama et al., U. S. Patent No. 5257316.

Regarding claim 1, Hobelsberger discloses a bass reproduction loudspeaker system in a enclosed housing comprising a sound radiating speaker, constituting a passive radiator, and a sound transducer, which reads on a 1<sup>st</sup> speaker and with a sensor disposed therein between. As well, it is common for a passive radiator and aspeaker to be mounted in the same housing/cabinet. However, Hobelsberger fails to disclose the sound transducer/speaker as being postioned inversely and the sensing sensing both the sound emitting devices. The examiner maintains that a inversely mounted loudspeaker and sensor for sensing both sound emitting devices are well known in the art.

Regarding the inversely mounted loudspeaker, in a similar field of endeavor, Van Thillart discloses a cabinet with an opening and a speaker for emitting audio, which is

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mounting inversely or invertedly in the cabinet (col. 2, lines 49-67 and col. 3, line 1, and 36-44; and figure 3), which reads on a "cabinet and a first speaker".

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Hobelsberger by incorporating an inversely mounted loudspeaker for the purpose of the optimizing the structure of the loudspeaker system for optimal performance as desired, such as enhancing the frequency of the system.

Regarding the sensor, in a similar field of endeavor, Takeyama et al. discloses an acoustic conductance and silencer utilizing same. Takeyama et al. disclosure comprises an acoustic sensor the senses two sources, in which the two sources are speakers (figure 2).

It would have obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Hobelsberger and Thillart by providing a sensor the sensing a signal for both sound sources, such the sound radiating speaker and the sound transducer.

Regarding **claim 2**, Hobelsberger, Thillart, and Takeyama (herein, Hobelsberger et al.) disclose everything claimed as applied above (see claim 1). Hobelsberger further discloses a low frequency audio system (abstract).

Regarding **claim 6**, Hobelsberger et al. discloses everything claimed as applied above (see claim 1). Hobelsberger further discloses the claimed limitations (col. 2, lines 36-62).

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Regarding **claim 10**, Thillart and Hobelsberger disclose everything claimed as applied above (see claim 1). Further, Hobelsberger discloses a sound absorbing material (col. 4, lines 17-21), which constitutes the "acoustic absorbing material".

3. **Claim 12** is rejected under 35 U.S.C. 103(a) as being unpatentable over Van Hobelsberger et al. and further in view of Bertagni et al.

Regarding **claim 12**, Hobelsberger et al. fail to specifically disclose electrodynamic planar speaker. The examiner maintains that such a loudspeaker was well known in the art.

Regarding the electrodynamic planar speaker, in a similar field of endeavor, Bertagni disclose a planar diaphragm loudspeaker comprising electromagnetic drivers, which constitutes an electrodynamic planar speaker.

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Thillart and Hobelsberger by incorporating an electrodynamic planar speaker for the purpose of dynamic quality and good efficiency in sound output; and with improved frequency response as taught by Bertagni in col. 3, lines 62-67.

4. **Claim 13** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hobelsberger et al.

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Regarding **claim 13**, Hobelsberger et al. disclose everything claimed as applied above (see claim 1). However, Hobelsberger et al. fails to specifically disclose electrostatic planar speaker. The examiner takes official notice of the fact that an electrostatic planar speaker was well known in the art.

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Hobelsberger et al. by providing an electrostatic planar speaker for the purpose of employing a small speaker in size, yet providing good sound quality.

5. Regarding **claims 14-16, 19-20**, they are interpreted and thus rejected for the same reasons set forth above in **claims 1-3, and 12-13**, respectively. Since **claims 14-16 and 19-20** disclose a method, which corresponds to the apparatus/system of **claims 1-3 and 12-13**; the method is obvious in that it simply provides functionality for the structure of **claims 1-3 and 12-13**.

6. **Claims 3, 8-9 and 17-18**, are rejected under 35 U.S.C. 103(a) as being unpatentable over Hobelsberger et al. in view of Tanaka et al.

Regarding **claim 3**, Hobelsberger et al. discloses everything claimed as applied above (see claim 1). However, Hobelsberger fails to disclose the sensor as comprising speaker. Tanaka et al. discloses the sensor as being a moving-coil sensor (col. 13, lines 24-28), which constitutes the sensor as speaker, which indicates the sensor as a "second speaker".

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It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Hobelsberger et al. by implementing the sensor as a speaker for the purpose of acquiring the optimal audio system as desired and for reasons inherently taught by Tanaka et al. in col. 13, lines 24-48.

Regarding **claim 7**, the claimed limitations regarding the width of the first speaker and the sensor, are inherently taught in the rejection of claim 1.

Regarding **claims 8-9 and 17-18**, Hobelsberger et al. discloses everything claimed as applied above see (claims 1 and 14, respectively). It would have been obvious to one ordinary skill at the time the invention was made to modify the invention of Hobelsberger et al. by incorporating a desired signal-to-noise ratio value and well as a desired feedback factor for the desired optimal performance of a low frequency (15 to 300 Hz) audio system.

#### ***Allowable Subject Matter***

7. **Claims 4 and 5** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's argues the references of prior art fail to disclose the claimed limitation as amended. The examiner the has provided a reference the supports a passive

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radiator or radiating speaker with a sound transducer indicative of the amended limitations.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura A Grier whose telephone number is (703) 306-4819. The examiner can normally be reached on Monday - Friday, 7:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

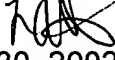
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**Or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

LAG   
June 30, 2002

  
FORESTER W. ISEN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600